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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,872	10/10/2003	Wenbing Yun	0002.0004.us	7844

29127 7590 12/27/2006
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EXAMINER

ASSAF, FAYEZ G

ART UNIT PAPER NUMBER

2872

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/683,872

Applicant(s)

YUN ET AL.

Examiner

Fayez G. Assaf

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7,9-13,15,16,18 and 20 is/are rejected.
- 7) ☒ Claim(s) 14,17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 112

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The language of the claim is vague: It is not clear whether the target is a sample, a mask (as in claim 14) or an AFO element (claim 18).

Correction is required.

Election/Restrictions

Applicant's election of Invention III: 7, 9-19 and 20 (new) in the reply filed on 10/11/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election **without** traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7, 9-13, 15, 16 and 20 are rejected under 35 U.S.C.

103(a) as being unpatentable over Suckewer (US 5,177,774).

Regarding claims 7, 9-11, 13, 15, 16 and 20, Suckewer discloses an optical system comprising: an extreme ultraviolet radiation source (2 of Fig. 2); a spectral filter (27 of Fig. 2) that filters ultraviolet radiation generated by the source; a reflective condenser (8 of Fig. 2) that directs the ultraviolet radiation onto a target; an objective lens (i.e. zone plate 28 of Fig. 2) that forms an image of the ultraviolet radiation from the target; and a CCD detector (16 of Fig. 2) detecting the image formed by the objective lens. Suckewer is silent on:

- The system incorporates an aperture for spatially filtering the ultraviolet radiation.
- The zone plate material being MO, Nb, Tc or Ru.
- The condenser being spherical.

However, such features are well known in optical microscope systems for reflecting unwanted radiation, utilizing X-ray radiation and accurate focusing, respectively.

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It would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to incorporate such aperture and condenser for the purpose of reducing the noise in the optical system. Furthermore, The selection of a known material based on its suitability for its intended does not serve as basis for patentability.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize such materials, since it has been held to be within the ordinary skill of worker in the art to select a known material on the basis of its suitability for the intended use. One would have been motivated to use MO, Nb, Tc or Ru because they are transparent at the operating wavelengths of the device of Suckewer's.

Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945)

Regarding claim 12, Suckewer discloses the spectrum spectral filter being a multilayer notch filter (line 24 to line 27 of Col. 6).

Allowable Subject Matter

Claims 14, 17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten

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in independent form including all of the limitations of the base claim and any intervening claims.

Claim 14 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest mask residing on a Rowland circle determined by the condenser as set forth in the claimed combination.

Claims 17 and 19 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest the chromatic Fresnel optic as set forth in the claimed combination.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Goldstein (US 2003/0058529 A1)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fayez G. Assaf whose telephone number is (571) 272-2307. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the

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organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Fayez G. Assaf
Primary Examiner
Art Unit 2872

12/23/2006